REMARKS

This paper is responsive to the Non-Final Office Action mailed July 30, 2009. Claims 15, 16, and 18-30 are pending. All claims are rejected. No claims are amended.

Rejection Under 35 U.S.C. § 103(a)

The present invention is generally directed to emulsifiable concentrate herbicide compositions. Claims 15, 16, and 18-30 are rejected under 35 U.S.C. §103(a) as unpatentable over Aven (EP 1025757 A1) in view of Hei (6,593283) as evidenced by Sealed Air (MSDS Instapak Port Cleaner, Rev. 006, 03/2005). *See* Office Action at 3.

The *Prima Facie* Case

Aven teaches emulsifiable concentrate formulations for pesticidal crop protection active compounds such as pendimethalin and trifluralin. According to the Office Action, Aven teaches "a particularly preferred cosolvent is a mixture consisting of glutaric acid dimethyl ester, succinic acid dimethyl ester, and adipic acid dimethyl ester, most preferred DBE." *See* Office Action at 4 (bottom). Nevertheless, the Office Action acknowledges that Aven does not teach "the co-solvent being a diisobutyl adipate or a mixture of diisobutyl adipate, diisobutyl glutarate, and diisobutyl succinate." *See* Office Action at 6. To remedy this deficiency, the Office Action relies on Hei, which according to the Office Action teaches, *inter alia*, dibasic ester solvents such as DBE and DBE-IB. *See id.* Moreover, according to the Office Action, Hei teaches that its composition is suitable for application to growing or harvested plant material including leaves, stems, tubers, roots, seeds, and the like. *See id.* The Office Action also cites Sealed Air as disclosing that DBE-IB is a composition comprising 55-70% diisobutyl glutarate, 20-30% diisobutyl succinate, and 10-20% diisobutyl adipate. *See* Office Action at 6. Therefore,

according to the Office Action, Hei teaches a composition useful for plant protection wherein the solvents DBE and DBE-IB are suitable alternatives for each other, and it would have been obvious to one of ordinary skill in the art to combine the teachings of Aven and Hei. *See* Office Action at 6-7. Applicant respectfully traverses.

The Office Action relies on Hei to teach the DBE and DBE-IB are suitable alternatives for eachother. Hei teaches:

> Preferred antimicrobially-active solvents having a density different from that of water (and thus especially useful in compositions that will be diluted with water and applied atop horizontal or generally horizontal surfaces) include acetamidophenol (specific gravity 1.027); acetanilide (specific gravity 1.219; water solubility <1%); acetophenone (specific gravity 1.0238; water solubility <1%); [2-acetyl-1-methylpyrrole (specific gravity 1.04); benzyl acetate (specific gravity 1.0515; water solubility <1%); benzyl alcohol (specific gravity 1.0413; water solubility .about.4%); benzyl benzoate (specific gravity 1.118; water solubility <1%); benzyloxyethanol (specific gravity 1.07; water solubility <1%); ethers or hydroxyethers such as ethylene glycol phenyl ether (specific gravity 1.104; water solubility 2.3%; commercially available as DOWANOL EPH.TM. from Dow Chemical Co.) and propylene glycol phenyl ether (specific gravity 1.063; water solubility 1.1%; commercially available as DOWANOL PPH.TM. from Dow Chemical Co.); essential oils (e.g., benzaldehyde, pinenes (alphas, betas, etc.), terpineols, terpinenes, carvone, cinnamealdehyde, borneol and its esters, citrals, ionenes, jasmine oil, limonene, dipentene, linalool and its esters); dibasic esters such as dimethyl adipate, dimethyl succinate, dimethyl glutarate (often available in a mix with specific gravities greater than 1.00; including products available under the trade designations **DBE**, DBE-3, DBE-4, DBE-5, DBE-6, DBE-9, **DBE-IB**, and DBE-ME from DuPont Nylon), dimethyl malonate, diethyl adipate, diethyl succinate, diethyl glutarate, dibutyl succinate, and dibutyl glutarate; dialkyl carbonates such as dimethyl carbonate, diethyl carbonate, dipropyl carbonate, diisopropyl carbonate, and dibutyl carbonate; C.sub.1-16 protonated carboxylic acids such as 2-ethyl-1-hexanoic acid, butyric acid, octanoic acid, heptanoic acid, nonanoic acid, and decanoic acid; C.sub.1-12 organic anhydrides such as acetic anhydride, succinic anhydride, phthalic anhydride, maleic anhydride, and alkyl or alkenyl succinic anhydrides; organo-nitriles such as acetonitrile and benzonitrile; organo-phosphates and phosphonates such as tributyl phosphate, tripropyl phosphate, 2-ethyl-1-hexyl phosphate; and phthalate esters such as dibutyl phthalate, diethylhexyl phthalate, and diethyl phthalate. The water solubilities noted above are room temperature values. Benzyl alcohol, phenylethanol, essential oils, dibasic esters, dialkyl carbonates, ethylene glycol phenyl ether and propylene glycol phenyl ether are particularly preferred

> antimicrobially-active solvents. **Mixtures of antimicrobially-active solvents can be used if desired.**

Hei at col. 7, lines 1-47 (emphasis added).

As can be seen from the excerpt form Hei above, "DBE-IB" is just one of a host of solvents disclosed as "preferred antimicrobially active solvents." Applicants respectfully submit that Hei does not provide any teaching or suggestion to use DBE-IB in a pesticidal composition such as Aven, and one of ordinary skill in the art would have had no reason, based on the cited references to select DBE-IB over one or more of the vast list of other solvents taught by Hei. Moreover, Applicant respectfully submits that Hei does not teach that DBE-IB is equivalent to DBE any more than it teaches that any of the other numerous solvents are equivalent to DBE. If any equivalency is taught by Hei, it is that the solvents listed in col. 7. are equivalent for the particular composition of Hei, not in all compositions, or in the composition of Aven.

Aside from the fact that there is no motivation or reason for one of ordinary skill in the art to have introduced the DBE-IB of Hei into the composition of Aven, doing so would also not have been "obvious to try."

In *In re Kubin*, the Federal Circuit recently reiterated its clarification of two classes of situations where "obvious to try" is erroneously equated with obviousness under § 103:

> 1) "[W]hat would have been 'obvious to try' would have been to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful. In such circumstances, where a defendant merely throws metaphorical darts at a board filled with combinatorial prior art possibilities, courts should not succumb to hindsight claims of obviousness."

> 2) "[W]hat was 'obvious to try' was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior

> art gave only general guidance as to the particular form of the claimed invention or how to achieve it."

In re Kubin, 561 F.3d 1351, 1359 (Fed. Cir. 2009)*(citations omitted).*

With regard to the first situation, Aven and Hei give no indication of which parameters are critical, or which choices are likely to be successful (*i.e.*, why one of ordinary skill in the art should choose (or expect success in choosing) to introduce the DBE-IB of Hei into the composition of Aven, among the multitude of other possible solvents). Hei provides no reason why one of skill in the art would choose DBE-IB instead of, for example, a mixture of phthalic anhydride, benzyl acetate, and tributyl phosphate.

With regard to the second *Kubin* situation, the references "[give] only general guidance as to the particular form of the claimed invention or how to achieve it." As discussed above, Hei provides only general teachings with numerous possible choices and no guidance regarding how to select the particular combination of elements to arrive at the present invention.

With regard to the recitation in claim 15 of "further wherein the concentration of said active ingredient is at least 400 g/l," the Office Action states that such concentration would be obvious in view of the range (100 to 850 g/L) disclosed in Aven. *See* Office Action at 7. Aven teaches that the solubility of active ingredients emulsifiable concentrates depends strongly on their structure. Aven at ¶ [0059]. Moreover, Aven teaches that in the case of solid crop protection compounds (like pendimethalin and trifluralin), the concentration is preferably between 10 to 300 g/L. *See* Aven at ¶ [0060]. Applicant submits that given the teaching of Aven, it would not have been obvious for one of skill in the art to formulate a composition wherein the concentration of pendimethalin or trifluralin was at least 400 g/l.

For the reasons above, Applicant respectfully submits that under current law, the Office

Action does not establish a *prima facie* case of obviousness and this rejection should be withdrawn.

Secondary Considerations

In the alternative, Applicant respectfully submits that even if a *prima facie* case of obviousness is established, it is overcome by a showing of unexpected results.

Emulsifiable concentrates of dinitroaniline compounds often suffer from crystallization at low temperatures or upon mixing with water, which may result in problems including loss of activity or filter clogging. *See* Specification at p. 1, line 26-30. Applicants have discovered that the claimed compositions unexpectedly exhibit reduced crystallization while maintaining good emulsion quality.

The Office Action indicates that Applicant's previous arguments regarding unexpected results concerning the disclosure in the specification at p. 2, lines 31-34 and Example 1, were found unpersuasive because "Applicant's unexpected data...does not show a side by side comparison of the closest prior art, i.e. Aven...." *See* Office Action at 7. The Examiner is respectfully directed to the Declaration of Paul Gioia submitted concurrently herewith, which shows the unexpected preparation of a emulsion having no crystals and good emulsion quality when a mixture of diisobutyl adipate, diisobutyl glutarate, and diisobutyl succinate is used instead of a mixture of dimethyl adipate, dimethyl glutarate, and dimethyl succinate (*i.e.* Aven).

In view of these unexpected results, Applicants respectfully submit that the subject matter of the present claims would not have been obvious to one of ordinary skill in the art. Accordingly, Applicants request withdrawal of this rejection.

CONCLUSION

An indication of allowance of all claims is respectfully solicited.

Respectfully submitted,

Hunton & Williams, L.L.P.

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By: _____

Robert M. Schulman
Registration No. 31,196

Dwight M. Benner II
Registration No. 52,467

HUNTON & WILLIAMS LLP
Intellectual Property Department
1900 K Street, N.W., Suite 1200
Washington, D.C. 20006-1109
Telephone: (202) 955-1500
Facsimile: (202) 778-2201